Contents Volume 231

Volume 231 No. 1

Salinity tolerance in *Hordeum vulgare*: ion concentrations in root cells of cultivars differing in salt tolerance
T.J. Flowers and M.A. Hajibagheri **1–9**

Depth distribution of cherry (*Prunus avium* L.) tree roots as influenced by grass root competition
L.A. Dawson, E.I. Duff, C.D. Campbell and D.J. Hirst **11–19**

Methane and nitrous oxide exchange in differently fertilised grassland in southern Germany
S. Glatzel and K. Stahr **21–35**

Determination of low molecular weight dicarboxylic acids and organic functional groups in rhizosphere and bulk soils of *Tsuga* and *Yushania* in a temperate rain forest
M.-C. Chen, M.-K. Wang, C.-Y. Chiu, P.-M. Huang and H.-B. King **37–44**

Cereal/legume rotations affect chemical properties and biological activities in two West African soils
S. Alvey, M. Bagayoko, G. Neumann and A. Buerkert **45–54**

Rapid transformations of plant water-soluble organic compounds in relation to cation mobilization in an acid Oxisol
J.C. Franchini, F.J. Gonzalez-Vila, F. Cabrera, M. Miyazawa and M.A. Pavan **55–63**

Promotion of AM utilization through reduced P fertilization 2. Field studies
H. Kahiluoto, E. Ketoja, M. Vestberg and I. Saarela **65–79**

Effects of nickel on *Frankia* and its symbiosis with *Alnus glutinosa* (L.) Gaertn
C.T. Wheeler, L.T. Hughes, J. Oldroyd and I.D. Pulford **81–90**

Effect of soil moisture at different temperatures on Rhizoctonia root rot of wheat seedlings
J.S. Gill, K. Sivasithamparam and K.R.J. Smettem **91–96**

Root system response of C_4 grass seedlings to CO_2 and soil water
J.D. Derner, H.W. Polley, H.B. Johnson and C.R. Tischler **97–104**

Seed phosphorus (P) content affects growth, and P uptake of wheat plants and their association with arbuscular mycorrhizal (AM) fungi
Y-G. Zhu and S.E. Smith **105–112**

Fluxes of N_2O, CH_4 and CO_2 on afforested boreal agricultural soils
M. Maljanen, J. Hytönen and P.J. Martikainen **113–121**

Root distribution and morphology of maize seedlings as affected by tillage and fertilizer placement
A. Chassot, P. Stamp and W. Richner **123–135**

The Joensuu dasotrons: A new facility for studying shoot, root, and soil processes
L. Finér, P. Aphalo, U. Kettunen, I. Leinonen, H. Mannerkoski, J. Öhman, T. Repo, A. Ryyppö **137–149**

Arabidopsis ammonium transporters, AtAMT1;1 and AtAMT1;2, have different biochemical properties and functional roles
M.C. Shelden, B. Dong, G.L. de Bruxelles, B. Trevaskis, J. Whelan, P.R. Ryan, S.M. Howitt, M.K. Udvardi **151–160**

Volume 231 No. 2

Measuring and modelling the transport and root uptake of chemicals in the unsaturated zone
I. Vogeler, S.R. Green, D.R. Scotter and B.E. Clothier **161–174**

Organic carbon content and distribution in soils under different land uses in tropical and subtropical China
L. Zhong and Z. Qiguo **175–185**

Alley cropping with *Senna siamea* in South-western Nigeria: I. Recovery of ^{15}N labeled urea by the alley cropping system
B. Vanlauwe, N. Sanginga and R. Merckx **187–199**

Alley cropping with *Senna siamea* in South-western Nigeria: II. Dry matter, total N, and urea-derived N dynamics of the *Senna* and maize roots
B. Vanlauwe, N. Sanginga and R. Merckx **201–210**

Changes in soil organic matter and phosphorus fractions under planted fallows and a crop rotation system on a Colombian volcanic-ash soil
S. Phiri, E. Barrios, I.M. Rao and B.R. Singh **211–223**

Fungal associations of Danish *Calluna vulgaris* roots with special reference to ericoid mycorrhiza
M. Johansson **225–232**

The presence of aluminum in arbuscular mycorrhizas of *Clusia multiflora* exposed to increased acidity
G. Cuenca, Z. De Andrade and E. Meneses **233–241**

Effect of salt and osmotic stresses on germination in durum wheat (*Triticum durum* Desf.)
M. Almansouri, J.-M. Kinet and S. Lutts **243–254**

Effects of pre-harvest soil acidification, liming and N fertilization on the survival, growth and needle element concentrations of *Picea abies* L. Karst. seedlings
U. Sikström **255–266**

Leaf and root respiration of *Lolium perenne* populations selected for contrasting leaf respiration rates are affected by intra- and interpopulation interactions
E. Kraus and H. Lambers **267–274**

***Azospirillum brasilense* colonisation of wheat roots and the role of lectin–carbohydrate interactions in bacterial adsorption and root-hair deformation**
I.V. Yegorenkova, S.A. Konnova, V.N. Sachuk and V.V. Ignatov **275–282**

Al uptake kinetics in roots of *Melastoma malabathricum* L. – an Al accumulator plant
T. Watanabe, M. Osaki and T. Tadano **283–291**

Announcement **293**

Volume Contents **295–297**

Author index **299**